

Montana Department of Natural Resources and Conservation Forested State Trust Lands Habitat Conservation Annual Update

Reporting Period

January 1,
2018-
December 31,
2018



INTRODUCTION

The Montana Department of Natural Resources and Conservation (DNRC) Forested State Trust Lands Habitat Conservation Plan (HCP) is a plan DNRC developed in cooperation with the United States Fish & Wildlife Service (USFWS) to acquire an Incidental Take Permit (Permit) for the Forest Management Program for a 50-year term. In the HCP, DNRC committed to provide the USFWS annual and 5-year monitoring reports for the duration of the plan. The monitoring reports help the two agencies evaluate DNRC's compliance with required measures, and the effectiveness of conservation commitments. This is the seventh annual update, and the reporting period for this update is January 1, 2018-December 31, 2018. According to the results reported in the following sections, DNRC has fulfilled its annual commitments for monitoring and reporting according to HCP Chapter 4 – Monitoring and Adaptive Management (DNRC 2010).

As outlined in Chapter 8 (HCP Implementation), DNRC and the USFWS are required to meet annually. These meetings allow DNRC to present the USFWS with annual updates, evaluate new science, and they foster communication between the two agencies (DNRC 2010).

MONITORING AND ADAPTIVE MANAGEMENT

During development of the HCP conservation strategies, DNRC and the USFWS included commitments to monitor key components of the strategies. The monitoring and adaptive management program provides assurances that the HCP is being appropriately and effectively implemented, and it outlines a course of action if the conservation strategies are not yielding the desired results.

Monitoring

There are two types of monitoring: (1) implementation monitoring and (2) effectiveness monitoring. Implementation monitoring ensures implementation of DNRC's conservation commitments throughout the Permit term. Implementation monitoring represents DNRC's largest monitoring commitment associated with the HCP, and it involves tracking, reporting and evaluating whether the covered activities are being performed in compliance with the HCP requirements. Implementation is primarily documented through project-level HCP checklists and validated through office and field reviews (DNRC 2010).

Effectiveness monitoring typically involves evaluation of a particular conservation commitment or suite of commitments designed to have a desired effect on a target species or resource. This type of monitoring is intensive and requires considerable resources and expertise to conduct data collection and perform related analyses. Effectiveness monitoring for the HCP is fulfilled through a commitment by both DNRC and the USFWS to consider any new relevant research at annual meetings, and through DNRC's commitment to conduct monitoring to evaluate whether management prescriptions and conservation commitments are having the desired effect on the given species.

The monitoring tables in this update summarize both the implementation and effectiveness monitoring that took place during this reporting period. The tables contain information that must be reported annually as described in tables in the HCP Chapter 4 (DNRC 2010). The tables contain abbreviated descriptions of the HCP commitments that DNRC is required to report on annually. For full descriptions of those commitments, please see Chapter 2 of the HCP.

Adaptive Management

Adaptive management is a process whereby conservation commitments and management actions may be changed based on the results obtained from effectiveness monitoring and/or research. This process results in a feedback loop that incorporates improved information into everyday practices. This update serves as a component of the adaptive management process.

HCP CHECKLIST

HCP implementation checklists are the primary tool that DNRC uses to demonstrate and document compliance with HCP commitments. The HCP implementation checklists are macro-enabled spreadsheets that list specific commitments applicable to each field office. The checklists allow forest management staff to verify which commitments are applicable on a particular project, if they are being implemented, and how they are being implemented. The checklists serve as prompts to help ensure that all applicable commitments are considered and applied appropriately on each project. The checklists also aid in organizing, tracking and summarizing commitment application and any necessary allowances. At the end of the reporting period checklist data is compiled into a database that provides summary information required in the annual updates and 5-year reports. Much of the information presented in the following tables was compiled using the checklists and the associated database. There were 26 HCP checklists completed during this reporting period all of which were associated with commercial timber harvest.

GRIZZLY BEAR

DNRC manages state trust lands located in grizzly bear habitat. The following table outlines the annual reporting requirements and results for grizzly bears.

Table 1 Grizzly bear reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
GB-PR4 Constructed open roads and minimized road in RMZs, WMZs or avalanche chutes. (allowances reported annually)	HCP Checklist was reviewed on each project. All projects with such construction, and the circumstances, would be reported.	From HCP implementation checklist Number of projects that were reviewed = 26 Number of projects had open road construction in one or more of these areas = 0.	v.2.4-11
GB-PR5 Suspend motorized forest management activities within 0.6 mile of active den sites until May 31	Report active den sites found, including the following information (to the extent it is available): (1) location of the den, (2) when the bear was documented as present and	No active dens were found in 2018.	v.2.4-11

Table 1 Grizzly bear reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)																		
	by whom, (3) when the bear vacated the site (if known), and (4) a description of activities that were delayed as a result of the den site.																				
GB-RZ6 Granting of Easements – Discourage granting of easements that relinquish DNRC control on roads within grizzly bear recovery zone. (annual and 5 year)	Use HCP Implementation Checklist to Identify Circumstances and Mitigation Associated with the Easement. Annually compile the number of easements granted and associated miles of newly created open roads.	There were 0 reciprocal access agreements reported within grizzly bear recovery zones for 2018.	v.2.4-15																		
GB-ST1(2) Has DNRC installed bear presence signs? Is DNRC maintaining these signs?	Number and locations included in accomplishment report for Stillwater Unit. Provide informal updates on maintenance issues as needed.	Stillwater Unit has 6 mapped sign locations for the Stillwater Block that were reported to the USFWS in 2012. Four signs located at key locations have been installed and maintained on the main block. Two remaining signs were installed on the Coal Creek State Forest on September 19, 2018.																			
GB-SC1 Maintain or decrease baseline open road amounts at the administrative unit level. Improve GIS road layer. (annually as needed)	Report open road amounts (tracked with GIS) at the administrative unit level to compare with HCP baseline. GIS data quality and management reported at annual meeting.	Number of projects reviewed when applicable using open road reduction checklists = 4 See Attachment GB-1, which provides information regarding road amounts by road class, unit office and area office during the monitoring period as compared with baseline levels in 2012. <table><tr><td><u>Unit</u></td><td><u>2012 ITP</u></td><td><u>2018</u></td></tr><tr><td>KAL</td><td>17.8</td><td>11.4</td></tr><tr><td>STW</td><td>1.8</td><td>1.7</td></tr><tr><td>CLW</td><td>16.8</td><td>14.0</td></tr><tr><td>MSO</td><td>4.1</td><td>0.0</td></tr><tr><td>HEL</td><td>0.2</td><td>0.1</td></tr></table>	<u>Unit</u>	<u>2012 ITP</u>	<u>2018</u>	KAL	17.8	11.4	STW	1.8	1.7	CLW	16.8	14.0	MSO	4.1	0.0	HEL	0.2	0.1	v.2.4-22
<u>Unit</u>	<u>2012 ITP</u>	<u>2018</u>																			
KAL	17.8	11.4																			
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Table 1 Grizzly bear reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
GB-SC4	Report Pits Operated >0.25 Miles From Open Roads in Resting Parcels and Mitigations Applied.	From HCP implementation checklist No minor projects in resting parcels required the use of gravel sources greater than 0.25 miles from an open road during the monitoring period.	
GB-CY4 Has DNRC expedited reduction of open road densities for recovery zone parcels?	Compile and report information from Open Road Reduction Checklist (Appendix B, Document B-2) for all CYE recovery zone parcels (does not include CYE NROH parcels).	Initially completed in 2012. <i>Expedited review of CYE parcels added under the HCP Amendment in 2018 was completed on June 5, 2018 by Dale Peters and Ross Baty.</i>	v.2.4-25

CANADA LYNX

Some forested trust lands managed by DNRC occur within the distribution of Canada lynx, which was listed as threatened in 2000 by the USFWS. The following table outlines the reporting requirements and results for Canada lynx.

Table 2 Canada lynx reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
LY-HB1 Lynx Habitat Map – Track lynx habitat in the HCP project area. (annual)	Provide lynx habitat map depicting annual changes and table that includes lynx habitat amounts by type for each administrative unit and LMA.	Results are provided for year 2018 in Habitat tables found in Attachment L-1 and L-2. Total potential habitat overall has increased by 23,798 compared to the 2012 baseline as of the end of this monitoring period. This increase is primarily due to the addition of lands into the HCP in the amendment process completed in September 2018. Other data corrections, model corrections, and minor land disposals have accounted for other shifts in acreages since 2012.	v.2.4-29
LY-HB6 Maintain 65/35% ratio of suitable/non-suitable habitat on	Report acres and percentage of total potential lynx habitat, suitable lynx habitat and	CLO = 27,355 ac; 79% suitable NWLO = 56,388 ac; 85% suitable SWLO = 32,188 ac; 84% suitable	v.2.4-32

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
scattered parcels outside of LMAs. (year 2 and 5)	temporary non-suitable habitat on scattered parcels outside the LMAs for each land office	SWLO saw an appreciable increase in total potential and suitable habitat acres as a result of completing the HCP Amendment in September 2018, which added a sizable acreage of new lands. See lynx habitat table Attachment L-2.	

AQUATICS

The aquatic conservation strategies were developed by DNRC with the technical assistance of the USFWS. The process was initiated by identifying a specific biological goal applicable to the three HCP fish species. The identified biological goal was to protect bull trout, westslope cutthroat trout and Columbia redband trout populations and their habitat and to contribute to habitat restoration or rehabilitation, as appropriate, which may have been affected by past DNRC forest management activities. Commitments were developed to address known scientific information and uncertainties in scientific knowledge, as well as existing data gaps (DNRC 2010). The following table outlines the reporting requirements and results for the Aquatics Conservation Strategy.

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
AQ-RM (1) Riparian Management Zone Commitments. (annual)	Complete HCP Implementation checklist review on all sites.	During 2018, RMZs were delineated on 9 projects containing Class 1 streams or lakes. 6 of these projects include harvest plans for a total of approximately 46.5 acres of RMZ harvest.	v. 2.4-39
AQ-RM (2) Thresholds for RMZ harvest allowances. (annual and 5 year)	Acres of Class 1 RMZ, Acres of Class 1 RMZ harvest under allowances, and RMZ area in non-stocked or seed/sapling size class, by aquatic analysis unit (AAU).	A total of 46.5 acres of the managed portion of the RMZ were harvested in 2018. No Allowances were invoked during 2018. Percent total non-stocked, seedling-sapling size class/AAU: Bitterroot: 38.5% Blackfoot: 2.7% Flathead Lake: 15.5% Lower Clark Fork: 0.0% Middle Clark Fork: 6.0% Lower Kootenai: 7.1% Middle Kootenai: 4.3% Upper Kootenai: 6.2%	v. 2.4-39

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
		North Fork Flathead: 22.3% Rock Creek: 7.5% Stillwater: 4.4% Swan: 3.3% Upper Missouri: 5.6%	
AQ-SD Implement sediment delivery reduction commitments. (annual)	Amount of new road constructed, reconstructed, relocated, abandoned and reclaimed. Include maps (may be contract maps first few years until GIS is available).	See attachment SD-1 on page 18.	v.2.4-40
AQ-FC 1/6 of sites in need of corrective actions implemented, planned or designed every 5 years. All priority 1 sites completed within 15 years. All sites completed with 30 years. (annual and 5 year)	Maintain planning schedule and report accomplishments.	DNRC completed a preliminary inventory of stream crossing sites in 2006 and the results were reported in HCP/EIS. The original HCP baseline included 106 inventoried stream crossing sites in need of corrective actions. To date, 45 new sites have been added to the inventory for a total of 151 crossing sites. Currently, 65 sites have been removed from the planning schedule (See Aquatic Attachment #4 – HCP Fish Connectivity Implementation Monitoring). This includes 19 sites where corrective actions have been implemented. There are 86 sites remaining in need of corrective actions or assessment. All identified Priority 1 sites have been completed.	v.2.4-41
AQ-GZ Implement grazing conservation strategies for grazing licenses on classified forest lands. (annual)	Update status of grazing evaluations and verifications completed, and corrective action implemented.	For the 2018 monitoring period, 70 grazing evaluations were completed on HCP parcels. Of these evaluations, 14 (20%) support an HCP fish species. During the review of grazing evaluation data, 3 parcels (4%) showed evidence that further verification was necessary. These parcels will be evaluated in the 2019 field season. A previously identified (2017) corrective action was implemented in August 2018 to	v.2.4-41

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
		passively reduce grazing pressure on riparian vegetation and streambanks along the Blackfoot river through grazing exclosure. For a summary of inspections see Attachment AQ-GZ; Annual Summary Statistics of Grazing Verifications and Corrective Actions.	
AQ-Cumulative Watershed Effects (CWE) Has DNRC implemented the CWE commitments? (annual and 5 year)	Report number, type and location of CWE analysis completed. Provide documentation of mitigation measures or alternatives developed for projects with moderate or high CWE risks.	CWE analyses were completed for 13 forest management projects during 2018. For 9 of these projects, a Level 1 CWE analysis (coarse filter) was determined to be sufficient level of analysis due to determination of low risks. More detailed analysis (Level 2 and level 3) were completed on the other 4 projects where the CWE Coarse filter analysis determined that there was potential for moderate to high levels of risk.	v.2.4-41
Assess the potential Large Woody Debris (LWD) recruitment and determine whether in-stream LWD targets will be met on five or more riparian harvest sites. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	DNRC has completed pre- and post-harvest LWD monitoring on 13 sites under SMZ/RMZ harvest prescriptions. Post-harvest LWD levels met or exceeded targets at all sites. In 2018, three new sites were added to the monitoring program for a total of four ongoing monitoring sites. A synthesis report of completed RMZ monitoring sites is available upon request.	v.2.4-42
Evaluate levels of in-stream shade retained after riparian harvest. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	DNRC has completed pre- and post-harvest instream cover monitoring on 13 sites under RMZ/SMZ harvest prescriptions. Post-harvest shade monitoring indicates that current management is adequate to maintain suitable stream temperature regimes for HCP-covered fish species. In 2018, three new sites were added to the monitoring program. A synthesis report of completed RMZ monitoring sites is available upon request.	v.2.4-42

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
Monitor stream temperatures to evaluate if levels of in-stream cover are adequate to maintain stream temperatures. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	DNRC has completed pre- and post-harvest stream temperature monitoring on 12 sites under RMZ/SMZ harvest prescriptions. Post-harvest monitoring indicated that 9/11 sites met thresholds identified in the HCP. Two sites did not meet the chronic threshold, while one site did not meet the acute threshold. A monitoring report synthesizing stream temperature data is available upon request.	v.2.4-42
BMP Audits on all applicable projects. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	Internal BMP audits were conducted on 6 timber sale projects during 2018. Additionally, Statewide audits were conducted on 12 DNRC timber sales/ Results of the both the internal and statewide audits found that BMPs were properly applied on 98% of the practices rated. BMPs were effective in protecting soil and water on 99% of the practices rated. No major departures for either application or effectiveness were noted on any audits during the statewide reviews. Two major departures were noted on internal audits associated with existing stream crossing sites, specifically rock armoring and road drainage.	v.2.4-43
Timber sale inspections on all applicable projects. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	During 2018, 513 timber sale inspections were completed on 42 ongoing timber sale projects within HCP project area. Examples of inspection reports are available upon request.	v.2.4-43
Ongoing quantitative studies at two sites. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	Pre-harvest turbidity data continued to be collected on the Limestone West Timber Sale project area but ultimately discontinued when the selected action alternative was a conservation license resulting in no forest management. The South Woodard turbidity monitoring project in continuing with corrective actions expected in the summer of 2019.	v.2.4-43

Table 3 Aquatics reporting requirements and results

HCP COMMITMENT (Reporting Frequency)	REPORTING REQUIREMENTS	ACCOMPLISHMENTS & RESULTS	HCP Page(s)
Case studies monitoring the effectiveness of corrective actions in reducing sediment from existing sources. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	The South Woodward turbidity monitoring project is on-going with pre-corrective action data collection. Corrective actions to address BMP maintenance is scheduled for the summer of 2019 which will provide two years of pre-corrective action data. Significant effort was allocated to developing a new sampling procedure centered around Turbidity Threshold Sampling. Turbidity data now informs an automated sampler to collect water samples at specific turbidity thresholds. This will allow the development of sediment concentration curves and ultimately sediment yields.	v.2.4-43
Determine if fish connectivity corrective actions are effective. (annual and 5 year)	Annual update will consist of a summary of the status of all monitoring activities.	Fish connectivity improvements have been completed on 19 fish passage structures covered under the HCP. DNRC has completed 2-year, and 5-year effectiveness monitoring on all sites. One corrective action was identified and completed on a structure, all other sites met effectiveness thresholds.	v.2.4-43
AQ-GR1 Redd Trampling Pilot Study. (Develop and finalize plan by year 2, implement plan by year 3)	Complete a plan for Redd trampling pilot study by year 2.	Initial redd-risk assessment identified 135 classified forest grazing parcels containing stream segments with HCP-covered species present. Redd-risk were assigned to 98% of the parcels, with 45 total parcels identified for potential corrective actions. Lands added to the HCP in 2018 will be evaluated in 2019.	v.2.8-9

TRANSITION LANDS STRATEGY

The purpose of the transition lands strategy is to describe the process for moving DNRC lands into or out of the HCP project area. The strategy ensures adequate levels of conservation for HCP species while allowing DNRC to meet its land management and fiduciary trust obligations. This subsection summarizes land transactions within two cap types (5% and 10%) from the period between January 1, 2015 and December 31, 2015. According to the HCP, DNRC will cap the removal of HCP project area lands in the NCDE and CYE grizzly bear recovery zones, CYE NROH, LMAs, and bull trout core habitat areas to 5% of the baseline of the original HCP project area. Additionally, DNRC would cap the removal

of all other HCP lands at 10 to 15% of the original HCP project area. Since acres obtained through the Montana Working Forests Project have not yet been added to the HCP project area, the 10% cap applies.

Land Dispositions

No HCP project area lands were disposed of in 2018. DNRC with well within the cap described above.

TRAINING

Training DNRC staff responsible for implementing the HCP timber sale planning, design and administration is critical to ensure correct and consistent implementation of HCP commitments.

Implementation Training for this Reporting Period

The following training took place during the reporting period, and will continue as the HCP progresses forward.

Bear Avoidance Training

A web-based approach to satisfy GB-PR1 was approved by the USFWS and in place July 30, 2013. All staff that normally, or occasionally, perform duties associated with HCP-covered activities are required to view the bear-avoidance training video hosted on the DNRC employee intranet. To date there have been over 202 employee viewings of the video. In 2018, employees who had watched the video in 2013-2014 were requested to view it again. Approximately 40 viewings of the video occurred in 2018, of which approximately 16 were new or seasonal employees. A database is monitored by FMB staff to ensure compliance with GB-PR1 “employees trained on bear avoidance”.

Project-level Training

Project-level training occurs on a regular basis. Forest Management Bureau and Land Office Specialists participate on all Interdisciplinary Teams (ID) for projects in the HCP planning area. These Specialists are very familiar with the HCP and the conservation commitments. Many of them have served on the HCP Workgroup. This has made project-level training one of the most effective training tools for DNRC field staff. Questions arise on a project that might never surface in a classroom training session. Project-level training is ongoing and will continue to be a primary training method.

Additional Unit-specific training is planned for 2019 for the Swan and Stillwater Unit staff.

CHANGED CIRCUMSTANCES

The processes for responding to Changed Circumstances are described in Chapter 6 of the HCP. The USFWS and DNRC are required to ensure changed circumstances are identified and planned for in the HCP. Changed Circumstances may be a result of administrative changes, natural events or a natural disturbance. (DNRC 2010)

There were no Changed Circumstances during this reporting period. Historic flooding was experienced within large scale catchments, but screening criteria for changed circumstance flows from both blocked or scattered lands was never achieved at the 5th code watershed scale.

ADJUSTING FOR NEW RESEARCH

DNRC and USFWS are required to exchange any new relevant research or emerging science annually and at the 5-year review. Both parties cooperatively determine if the new information will warrant changes to commitments or management actions.

- DNRC signatory to NCDE Conservation Strategy.

- Lynx monitoring and de-listing process being initiated.

- Proctor et al. 2018, Effects of human-bear conflicts on trans-border grizzly bears (incl. CYE). Importance of food storage, bear safety courses, increase tolerance etc.

- Lamb et al. 2018, JAE, Demonstrated increase in use of areas by grizzly bears when open roads were restricted from motorized access. Recovery possible in multi-use landscapes.

- Olson, L.E.; Squires, J.R.; Roberts, E.K.; Miller, A.D.; Ivan, J.S.; Hebblewhite, M. 2017. Modeling large-scale winter recreation terrain selection with implications for recreation management and wildlife. Applied Geography. 86: 66–91. www.fs.fed.us/rmrs/publications/modeling-large-scale-winter-recreation-terrainselection-implications-recreation

- Olson, L.E.; Squires, J.R.; Roberts, E.K.; Ivan, J.S.; Hebblewhite, M. 2018. Sharing the same slope: Behavioral responses of Canada lynx to winter recreation. Ecology and Evolution. 1-18. www.fs.fed.us/rmrs/publications/sharingsame-slope-behavioral-responses-threatened-mesocarnivore-motorized-and-non

- Holbrook, Joseph D.; Squires, John R.; Bollenbacher, Barry; Graham, Russ; Olson, Lucretia E.; Hanvey, Gary; Jackson, Scott; Lawrence, Rick L. 2018. Spatio-temporal responses of Canada lynx (Lynx canadensis) to silvicultural treatments in the Northern Rockies, U.S. Forest Ecology and Management. 422: 114–124. www.fs.fed.us/rmrs/publications/spatio-temporal-responses-canadalynx-lynx-canadensis-silvicultural-treatments-northern

Key findings of this last cited report:

- Canada lynx depend primarily on spruce-fir forests and a home range dominated by mature, multi-storied forest structures and intermediate amounts (e.g., 10 - 40 percent) of regenerating forests produced by forest management and natural disturbance.

- Canada lynx use habitat treated by thinning approximately 20 years post-harvest, but it takes approximately 40 years of recovery for lynx to use regenerating forest treatments (clear-cuts and selection cuts).

- Home ranges of Canada lynx are composed of a mosaic of forest structures, and the amount of connected mature forest (≈50-60 percent) is important to the ability of female lynx to produce kittens.

- Canada lynx conservation and forest management are compatible within multiple-use lands, but a careful approach is needed that integrates both forest silviculture and species conservation.

- Sugden, B. D. 2018. Estimated sediment reduction with forestry best management practices implementation on a legacy forest road network in the Northern Rocky Mountains. Forest Science. 64 (2): 214–224.

[-Sugden, B. D., R. Steiner, J. E. Jones. 2019. Streamside management zone effectiveness for water temperature control in western Montana. International Journal of Forest Engineering.](#)

SUMMARY

The DNRC has successfully met the requirements for the seventh year of HCP implementation and monitoring.

REFERENCES

DNRC. 2010. Montana Department of Natural Resources and Conservation Forested State Trust Lands Habitat Conservation Plan: Final EIS, Volume II, Forest Management Bureau, Missoula, Montana.

Attachment GB-1: Miles of Road in Various Grizzly Bear Management Areas

2012 HCP BASELINE DATA - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices in Recovery Zones (Scattered or Blocked Status)	Linear Miles of Road in Recovery Zones						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	187.6	479.9	12.1	19.6	8.9	679.6	227	145,262	3.0
Kalispell Unit NCDE (Scattered)	14.6	28.2	0.0	2.6	0.0	42.8	10	6,465	4.2
Libby Unit CYE (Scattered)	0.0	8.2	0.1	0.4	0.2	8.3	4	2,848	1.9
Plains Unit CYE (Scattered)	6.0	8.5	0.0	0.1	0.0	14.5	5	3,308	2.8
Stillwater Unit NCDE (Blocked)	122.0	227.4	6.7	9.1	3.8	356.1	141	90,512	2.5
Stillwater Unit NCDE (Scattered)	2.0	11.1	0.0	0.0	0.0	13.1	4	2,474	3.4
Swan Unit NCDE (Blocked)	43.0	196.5	5.4	7.4	4.9	244.9	62	39,656	4.0
SWLO	19.9	23.0	0.0	3.6	1.0	42.9	11	7,229	3.8
Clearwater Unit NCDE (Scattered)	15.7	21.4	0.0	3.6	1.0	37.1	7	4,779	5.0
Missoula Unit NCDE (Scattered)	4.2	1.6	0.0	0.0	0.0	5.8	4	2,450	1.5
CLO	0.2	0.3	0.0	0.0	0.5	0.5	1	639	0.5
Helena Unit NCDE (Scattered)	0.2	0.3	0.0	0.0	0.5	0.5	1	639	0.5

* Does not include Abandoned or Reclaimed Roads

2012 HCP BASELINE DATA - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices in Non Recovery Occupied Zone (Scattered or Blocked Status)	Linear Miles of Road in Non Recovery Occupied Zones						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	101.2	141.2	3.0	12.3	6.9	245.3	59	37,715	4.2
Kalispell Unit NCDE (Scattered)	17.9	9.0	0.0	0.3	2.1	27.0	9	5,950	2.9
Libby Unit CYE (Scattered)	23.3	49.0	1.2	0.0	0.0	73.4	15	9,856	4.8
Libby Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0
Plains Unit CYE (Scattered)	8.7	2.6	1.8	0.0	0.0	13.1	4	2,269	3.7
Plains Unit NCDE (Scattered)	3.7	9.7	0.0	1.2	0.0	13.4	4	2,813	3.0
Stillwater Unit NCDE (Scattered)	47.6	70.9	0.0	10.8	4.9	118.4	26	16,826	4.5
SWLO	66.4	188.2	0.4	39.2	1.0	255.0	64	41,314	4.0
Anaconda Unit NCDE (Scattered)	6.7	14.4	0.0	0.0	0.0	21.2	9	6,011	2.3
Clearwater Unit NCDE (Scattered)	59.6	173.8	0.4	39.2	1.0	233.8	54	34,672	4.3
Missoula Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	1	631	0.0
CLO	10.2	68.2	0.1	7.3	1.9	78.5	53	33,717	1.5
Bozeman Unit GYE (Scattered)	5.0	6.0	0.1	0.0	0.0	11.0	13	8,129	0.9
Dillon Unit GYE (Scattered)	1.5	51.9	0.0	6.7	0.0	53.4	31	19,627	1.7
Helena Unit NCDE (Scattered)	3.8	10.3	0.0	0.6	1.9	14.1	9	5,961	1.5

* Does not include Abandoned or Reclaimed Roads

2012 HCP BASELINE DATA - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices outside Grizzly Bear Zones (Scattered Status)	Linear Miles of Road in Non Grizzly Bear Designated Areas						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	279.7	284.6	2.9	15.8	11.5	567.2	136.0	87,358	4.2
Kalispell Unit	110.4	71.9	0.0	9.8	10.9	182.3	44.0	27,980	4.2
Libby Unit	29.2	75.6	0.3	0.0	0.0	105.1	24.0	15,341	4.4
Plains Unit	140.1	137.1	2.5	6.1	0.7	279.7	69.0	44,036	4.1
SWLO	232.2	378.5	10.1	66.5	9.2	620.9	176.0	112,436	3.5
Anaconda Unit	78.2	63.4	0.0	2.0	0.8	141.6	61.0	38,760	2.3
Clearwater Unit	29.3	31.5	0.0	1.3	0.0	70.1	12.0	7,698	5.8
Hamilton Unit	36.3	98.9	9.8	46.9	6.4	145.0	36.0	22,820	4.1
Missoula Unit	88.4	175.5	0.4	16.3	2.1	264.2	67.0	43,157	3.9
CLO	44.9	142.8	1.9	13.1	1.7	189.6	122.4	78,358	1.5
Bozeman Unit	6.0	21.0	1.6	0.8	0.0	28.5	13.0	8,363	2.2
Dillon Unit	20.1	100.7	0.3	12.2	1.5	121.1	79.0	50,474	1.5
Helena Unit	18.8	21.2	0.0	0.0	0.2	40.0	31.0	19,520	1.3

* Does not include Abandoned or Reclaimed Roads

2018 HCP Annual Report - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices in Recovery Zones (Scattered or Blocked Status)	Linear Miles of Road in Recovery Zones						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	174.3	628.2	83.1	18.7	45.1	885.7	252.0	161,835	3.5
Kalispell Unit NCDE (Scattered)	11.4	0.0	31.3	2.6	0.3	42.7	10.0	6,457	4.3
Libby Unit CYE (Scattered)	0.0	6.9	0.1	0.4	1.2	7.0	4.0	2,846	1.7
Plains Unit CYE (Scattered)**	7.7	6.2	0.0	3.1	0.0	13.9	5.0	3,517	2.8
Stillwater Unit NCDE (Blocked)	102.2	218.5	42.2	12.5	13.4	362.9	141.0	90,432	2.6
Stillwater Unit NCDE (Scattered)	1.7	11.7	0.0	0.0	0.0	13.4	4.0	2,484	3.4
Swan Unit NCDE (Blocked)**	51.3	385.0	9.5	0.1	30.2	445.8	88.0	56,099	5.1
SWLO	14.0	26.0	2.8	7.4	1.8	42.8	10	6,650	4.3
Clearwater Unit NCDE (Scattered)**	14.0	26.0	2.8	7.4	1.8	42.8	10	6,330	4.3
Missoula Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	320	N/A
CLO	0.1	0.2	0.0	0.0	0.7	0.3	1	639	0.3
Helena Unit NCDE (Scattered)	0.1	0.2	0.0	0.0	0.7		1	639	0.3
* does not include abandoned or reclaimed									
**land acquisition and subsequent transition into the HCP have created a new baseline for these management units.									

2018 HCP Annual Report - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices in Non Recovery Occupied Zone (Scattered or Blocked Status)	Linear Miles of Road in Non Recovery Occupied Zones						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	105.7	161.6	3.1	11.9	12.1	270.4	58	36,744	4.7
Kalispell Unit NCDE (Scattered)	20.1	17.1	0.1	0.3	2.3	37.3	9	5,613	4.1
Libby Unit CYE (Scattered)	23.4	56.5	1.2	0.0	0.2	81.1	15	9,838	5.4
Libby Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	-	N/A
Plains Unit CYE (Scattered)**	7.1	9.0	1.8	0.2	0.7	17.9	4	2,237	4.5
Plains Unit NCDE (Scattered)	6.9	5.4	0.0	0.6	0.0	12.3	4	2,212	3.1
Stillwater Unit NCDE (Scattered)	48.2	73.6	0.1	10.9	8.9	121.9	26	16,844	4.7
SWLO	64.4	378.2	17.6	49.2	14.8	460.2	91	58,369	5.1
Anaconda Unit NCDE (Scattered)	1.3	34.5	0.0	1.6	1.9	35.9	9	6,011	4.0
Clearwater Unit NCDE (Scattered)**	63.0	343.7	17.6	47.6	12.9	424.3	82	52,358	5.2
Missoula Unit NCDE (Scattered)	0.0	0.0	0.0	0.0	0.0	0.0	0	-	N/A
CLO	16.1	67.5	5.0	1.2	7.9	88.6	53	33,701	1.7
Bozeman Unit GYE (Scattered)	5.9	12.2	0.0	0.6	0.4	18.2	13	8,143	1.4
Dillon Unit GYE (Scattered)	4.1	49.8	5.0	0.0	0.6	58.9	31	19,628	1.9
Helena Unit NCDE (Scattered)	6.1	5.5	0.0	0.6	6.9	11.6	9	5,930	1.3
* Does not include Abandoned or Reclaimed Roads									
**land acquisition and subsequent transition into the HCP have created a new baseline for these management units.									

2018 HCP Annual Report - DNRC Lands in the HCP Project Area									
Land Offices and Unit Offices Outside Grizzly Bear Zones (Scattered Status)	Linear Miles of Road in Non Grizzly Bear Designated Areas						Area		Road Density* (mi/mi ²)
	Open Roads	Restricted Roads	Seasonally Restricted Roads	Abandoned	Reclaimed	Total*	Total Area (mi ²)	Acres	
NWLO	246.6	360.6	3.2	28.4	14.0	610.3	139	88,665	4.4
Kalispell Unit	97.6	112.0	0.0	9.8	9.9	209.7	44	27,952	4.8
Libby Unit	33.0	78.0	0.1	0.0	0.0	111.0	25	15,741	4.4
Plains Unit	116.0	170.6	3.1	18.5	4.1	289.6	70	44,972	4.1
SWLO	186.6	843.8	13.9	91.0	12.8	1044.3	241	153,766	4.3
Anaconda Unit	15.4	129.6	0.0	13.4	2.1	145.0	60	38,227	2.4
Clearwater Unit	17.7	42.1	5.2	5.6	1.4	65.0	12	7,880	5.4
Hamilton Unit	32.9	114.4	3.7	56.4	7.0	151.0	37	23,496	4.1
Missoula Unit	120.5	557.7	5.0	15.5	2.4	683.3	132	84,163	5.2
CLO	68.3	107.3	4.7	8.3	7.7	180.2	123	78,883	1.5
Bozeman Unit	11.8	18.0	1.6	0.0	0.7	31.4	13	8,368	2.4
Dillon Unit	32.4	89.4	3.0	8.3	6.8	124.8	80	51,000	1.6
Helena Unit	24.0	0.0	0.0	0.0	0.2	24.0	30	19,515	0.8
* Does not include Abandoned or Reclaimed Roads									
**land acquisition and subsequent transition into the HCP have created a new baseline for these management units.									

Attachment LY-1: Composition of current (March 6, 2019) lynx habitat data, using the HCP lynx habitat definitions, on LMAs in the HCP project area

2012 HCP Baseline Data- DNRC lands in the HCP Project Area												
Habitat Class	Proposed LMA's (Land Office)											
	Stillwater West (NW)		Stillwater East (NW)		Coal Creek (NW)		Swan (NW)		Seeley Lake Area (SW)		Garnet Area (SW)	
Winter Foraging Habitat	20,330	57%	24,322	71%	6,410	49%	21,981	60%	1,724	38%	1,079	30%
Summer Foraging Habitat	6,478	18%	2,608	8%	1,934	15%	4,930	14%	265	6%	255	7%
Other Suitable Habitat	4,066	11%	2,627	8%	862	7%	3,441	9%	688	15%	1,847	51%
Suitable Habitat Subtotal	30,874	87%	29,557	86%	9,206	70%	30,352	83%	2,677	59%	3,181	87%
Temporary Non-Suitable Habitat	4,566	13%	4,903	14%	3,962	30%	6,080	17%	1,854	41%	462	13%
Total Potential Lynx Habitat	35,440	92%	34,460	94%	13,168	86%	36,432	92%	4,531	46%	3,643	49%
Non-Habitat	3,167	8%	2,226	6%	2,070	14%	6,224	16%	5,396	54%	3,863	51%
DNRC Total Acres	38,606	100%	36,686	100%	15,238	100%	39,657	100%	9,928	100%	7,507	100%

2018 HCP Annual Report and NEW BASELINE - DNRC lands in the HCP Project Area (Data from March 6, 2019)												
Habitat Class	Proposed LMA's (Land Office)											
	Stillwater West (NW)		Stillwater East (NW)		Coal Creek (NW)		Swan (NW)*		Seeley Lake Area (SW)		Garnet Area (SW)*	
Winter Foraging Habitat	17,505	50%	21,136	62%	5,672	44%	27,095	53%	1,865	42%	1,669	41%
Summer Foraging Habitat	10,114	29%	5,922	17%	2,169	17%	7,927	16%	187	4%	250	6%
Other Suitable Habitat	3,540	10%	3,057	9%	1,676	13%	5,021	10%	806	18%	1,555	38%
Suitable Habitat Subtotal	31,159	89%	30,115	89%	9,517	74%	40,042	79%	2,858	64%	3,475	86%
Temporary Non-Suitable Habitat	3,772	11%	3,913	11%	3,396	26%	10,763	21%	1,581	36%	588	14%
Total Potential Lynx Habitat	34,931	91%	34,028	93%	12,914	86%	50,806	91%	4,439	45%	4,063	45%
Non-Habitat	3,644	9%	2,629	7%	2,057	14%	5,292	9%	5,480	55%	4,873	55%
DNRC Total Acres	38,575	100%	36,657	100%	14,970	100%	56,098	100%	9,919	100%	8,936	100%
*Land acquisition and subsequent transition into the HCP have created a new baseline for these LMA's.												

*Land acquisition and subsequent transition into the HCP have created a new baseline for these LMA's.

Attachment LY-2: Acres of existing lynx habitat on Non-LMA parcels, using HCP lynx habitat definitions, on DNRC lands by Land Office in the HCP Project Area

2012 HCP BASELINE - DNRC lands in the HCP Project Area (Data from March 6, 2019)							
Habitat Class	HCP Project Area (%)						
	NWLO		SWLO		CLO		Total
Winter Foraging Habitat	44,859	69%	11,101	44%	N/A	N/A	55,960
Summer Foraging Habitat	4,580	7%	3,110	12%	3,078	8%	10,768
Other Suitable Habitat	8,515	13%	6,267	25%	22,862	60%	37,644
Suitable Habitat Subtotal	57,954	89%	20,478	82%	25,940	69%	104,372
Temporary Non-Suitable Habitat	7,519	11%	4,643	18%	11,901	31%	24,063
Total Potential Lynx Habitat	65,473	47%	25,121	18%	37,841	34%	128,435
Non-Habitat (includes non forested)	74,694	53%	118,423	82%	74,874	66%	267,991
Total Acres	140,167	100%	143,544	100%	112,714	100%	396,425

2018 HCP Annual Report and NEW BASELINE- DNRC lands in the HCP Project Area (Data from March 6, 2019)							
Habitat Class	HCP Project Area (%)						
	NWLO		SWLO		CLO		Total
Winter Foraging Habitat	38,974	59%	18,289	48%	0	0%	57,263
Summer Foraging Habitat	5,023	8%	6,306	17%	2,783	8%	14,112
Other Suitable Habitat	12,390	19%	7,594	20%	24,572	71%	44,556
Suitable Habitat Subtotal	56,388	86%	32,188	84%	27,355	79%	115,931
Temporary Non-Suitable Habitat	9,346	14%	6,014	16%	7,435	21%	22,795
Total Potential Lynx Habitat	65,734	47%	38,202	19%	34,790	31%	138,726
Non-Habitat (includes non forested)	74,591	53%	162,663	81%	78,434	69%	315,688
Total Acres	140,325	100%	200,865	100%	113,224	100%	454,414

Attachment SD-1: Road Activities Included in DNRC Timber Sale Contracts Sold Between 2012 and 2018

2018 HCP ANNUAL REPORT - DNRC LANDS IN THE HCP PROJECT AREA								
Road Activity	HCP PROJECT AREA ROAD ACTIVITIES (MILES) BY REPORTING							
	2012	2013	2014	2015	2016	2017	2018	Total Road Activities
Permanent Road Construction	15.7	25.6	23.0	27.2	26.00	23.70	9.90	151.1
Temporary Road Construction	5.3	10.9	9.3	6.0	9.2	10.5	1.6	52.8
Road Reclamation	4.3	4.6	1.9	0.2	0	0	1.7	12.7
Road Abandonment	0.0	0.0	1.0	1.7	0.1	0	0	2.8
Road Reconstruction	10.8	11.1	11.3	19.7	16.6	6.6	9.4	85.5
BMP Maintenance	120.2	111.3	204.6	177.9	176.3	199.8	153.3	1143.4
Total Road Activities	156.3	163.5	251.1	232.7	228.2	240.6	175.9	1,448.3

Attachment AQ-GZ: Annual Summary Statistics of Grazing Inspections, Verifications and Implemented Corrective Actions

Calander Year	Midterm Evals	Renewal Evals	Total Evaluations	HCP Parcels	% HCP	Supporting HCP Fishery?	% HCP Fishery	Verification Completed	% Verification	Corrective Action Implemented	Cumlative Corrective Actions
2012	19	81	100	83	83%	30	36%	12	12%	4	4
2013	63	60	123	98	80%	24	24%	10	8%	1	5
2014	33	25	58	39	67%	13	33%	3	5%	4	9
2015	17	26	43	27	63%	7	26%	3	7%	1	10
2016	42	62	104	76	73%	13	17%	2	2%	0	10
2017	55	28	83	65	78%	16	25%	4	5%	0	10
2018	34	74	108	70	65%	14	20%	4	4%	1	11
Totals/Averages	263	356	619	458	74%	117	26%	38	8%	1.5/year	11